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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,220	Applicant(s) TEVIS ET AL.	
	Examiner Elena Tsoy Lightfoot	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-40 is/are pending in the application.
- 4a) Of the above claim(s) 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 16, 2009 has been entered.

Response to Amendment

1. Amendment filed on July 16, 2009 has been entered. Claims 1-13, 15-18, 20, and 21 have been cancelled. New claims 25-40 have been added. Claims 24-40 are pending in the application. Claim 24 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

The grounds of rejections set forth in the previous Office Action have been withdrawn due to amendment. The new grounds are as follows:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 25-39 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Applying an image ink is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*,

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527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Claim 25 is a method for applying an image onto a game card but there is no steps of applying an image ink are recited.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekioka et al (US 6899752) in view of Kubota et al (US 5698284), further in view of Uematsu (JP07-073511A).

Sekioka et al discloses a method of making game tickets or cards (See column 9, lines 50-53) comprising applying UV curable ink resin composition to a plastic substrate (See column 2, lines 32-33), curing the ink coating layer to form a latent image (See column 3, lines 15-18); applying UV curable resin to the cured ink layer to provide a protective film that is *hard* and tough, water-resistant, fouling resistant and scratch-resistant, and capable of protecting the latent image (See column 8, lines 5-28).

Sekioka et al fails to teach that: (i) the protective film is formed from three layers (ii) by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers (Claim 25).

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As to three-layer protective film, Kubota et al teaches that it is desirable to form a hard film 6, 9 for protecting an optical plastic card (See column 1, lines 4-8) from two (See Fig. 2), **three** (See Figs. 3, 4; Abstract), four or five layers (See column 9, lines 52-55), each layer being formed by applying a coating composition comprising radiation curable oligomer (See column 8, lines 1-4, 62-66; column 9, lines 3-7) to achieve resistance to abrasion at lowered warpage (See column 7, lines 736). (The radiation-curable resin having a low shrinkage on curing is flexible, but is soft and has low resistance to abrasion. On the other hand, a radiation-curable resin having a large shrinkage on curing has excellent resistance to abrasion, although the warpage on shrinkage is large. Therefore, the provision of a multilayered hard layer comprising layers formed by using radiation-curable resins in such a manner that the shrinkage on curing of the radiation-curable resins successively increases from the innermost layer toward the outermost layer, the thickness of the layers being successively reduced from the innermost layer toward the outermost layer, can offer an optical recording medium which has a lowered warpage and, by virtue of synergistic effect of the layers constituting the hard layer, has excellent pencil hardness and resistance to abrasion).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a protective film for a card in Sekioka et al from three layers using radiation-curable resins in such a manner that the shrinkage on curing of the radiation-curable resins successively increases from the innermost layer toward the outermost layer, the thickness of the layers being successively reduced from the innermost layer toward the outermost layer, with the expectation of providing the desired lowered warpage of a card, excellent pencil hardness and resistance to abrasion, as taught by Kubota et al.

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As to partial curing, Kubota et al teaches that the layers may be formed by UV curing a previously applied layer before applying a next layer (See Fig. 3 and Example B-1) or the layers may be formed by wet-to-wet coating followed by simultaneous UV curing thereby forming a laminate without creating any *clear* interface between the layers (See Fig. 4 and column 11, lines 25-28, column 12, lines 3-15). Kubota et al fails to teach forming the hard layer having three-layer structure by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers (Claim 1).

Uematsu teaches that forming a protective multilayered film in an optical recording medium by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers allows to obtain a high reliability optical recording medium having improved *interlaminar adhesion* and scratch resistance at the protective layer side (See Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a hard layer in Kubota et al having three-layer structure by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers if improved interlaminar adhesion and scratch resistance of the hard layer is desired, as taught by Uematsu, and since Kubota et al teaches that a subsequent layer may be applied on either a wet layer or on fully cured layer depending on particular use of a final product.

As to claim 26, Kubota et al teaches that the layers 6 may be formed by *gravure* coating, *roll coating*, *Komma* coating, spin coating, knife coating, *silk screen* coating, T-die coating, slide coating, slit reverse coating or the like (See column 9, lines 38-43).

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As to claims 27 and 32, Kubota et al teaches that the coating composition may be solventless or diluted with a **solvent** (See column 9, lines 42-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used either water or an organic solvent for diluting the coating composition in Kubota et al because Kubota et al does not limit its teaching to a particular solvent.

As to claims 28-29, examples of the oligomer in Kubota et al include epoxy acrylate, urethane acrylate, polyester acrylate (See column 8, lines 37-39).

As to claims 30-31, it is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant concentration parameters (including those of claimed invention) in Kubota et al through routine experimentation depending on particular coating composition in the absence of a showing of criticality.

As to claims 33-35, the limitations of dependent claims 33-35 are described in the specification as being not subject matter of claimed invention (See Published Application, P23. The Applicants' specification discloses that the first, second and third compositions can optionally contain other components including, but not limited to, a surfactant, a thickener, an absorbent, a pigment or dye, which are **commonly used in the art**).

As to claim 36, Kubota et al teaches that a coating composition for may be solventless or diluted with a **solvent** (See column 9, lines 42-43). The first layer a, the second layer b, and the third layer c formed by coating are delicately mixed together in the course of air drying or thermodrying, and the interface of layers become apparently eliminated before radiation curing

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(See column 14, lines 13-17). Then, a radiation is applied to conduct curing (See column 14, lines 17-18). The elimination of the interface results in improved bending strength (See column 14, lines 18-19). The above coating may be carried out after dilution with a solvent to a suitable extent (See column 14, lines 19-20).

6. Claims 25-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekioka et al '752 in view of Kubota et al '284, further in view of Maag et al (US 6472026), and further in view of Uematsu '511.

Sekioka et al '752 in view of Kubota et al '284 is applied here for the same reasons as above.

Kubota et al fails to teach forming the hard layer having three-layer structure by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers (Claim 25).

Maag et al teaches that a process of forming a multilayer structure may be carried out in different ways: (i) by applying the individual lacquer layers in each case wet-on-wet, *optionally* after a short flash-off phase (claimed drying step), and curing the total multi-layer lacquer finish with a single final irradiation operation (See column 8, lines 51-60); (ii) by exposing each lacquer layer of the multilayer structure in each case separately to complete curing (See column 8, lines 60-63); (iii) by curing in each case *two successive* lacquer layers with a single common irradiation operation, and curing the underlying or overlying lacquer layer with a separate irradiation operation (See column 8, lines 63-66); (iv) by effecting *intermediate curing* of in each case one or two successive lacquer layers, followed by undertaking the complete curing of the total structure (See column 8, line 66 to column 9, line 5).

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Kubota et al teaches that the layers may be formed by UV curing a previously applied layer before applying a next layer (See Fig. 3 and Example B-1) or the layers may be formed by wet-to-wet coating followed by simultaneous UV curing thereby forming a laminate without creating any *clear* interface between the layers (See Fig. 4 and column 11, lines 25-28, column 12, lines 3-15).

Uematsu teaches that forming a protective multilayered film in an optical recording medium by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers allows to obtain a high reliability optical recording medium having improved *interlaminar adhesion* and scratch resistance at the protective layer side (See Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a multilayer structure of Kubota et al by using *any* technique from (i) to (iv) described in Maag et al depending on particular use of a final product: for example, by using wet-on-wet technique if a laminate without any *clear* interface between the layers is desired, as taught by Kubota et al, or by *partially* curing an applied layer before applying a subsequent layer followed by simultaneous curing of partially cured layers if improved interlaminar adhesion is desired, as taught by Uematsu.

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekioka et al '752/Kubota et al '284/Uematsu '511 or over Sekioka et al '752/Kubota et al '284/Maag et al '026/Uematsu '511, as applied above, and further in view of Brack (US 4303696).

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As to claim claimed additive, Kubota et al teaches that *silicone* is added to the outermost layer to improve the **slip** property (See column 17, lines 30-50).

Kubota et al fails to teach that a slip additive, a release additive and a wax are added to the third composition.

Brack teaches that the materials having good **slip or release** properties, are generally lipophilic, and can comprise *waxes*, silanes, siloxanes, *silicones*, fluorocarbons, and the like (See column 1, lines 63-66). Thus, silicone has both slip and release properties. Therefore, silicone of Kubota et al reads on both claimed slip additive and a release additive because claim 12 does not recite them being different additives.

As to a combination of silicone and wax, it is well settled that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. Therefore, it is prima facie obvious to combine silicone and wax to provide slip, release properties.

8. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekioka et al '752/Kubota et al '284/Uematsu '511 or over Sekioka et al '752/Kubota et al '284/Maag et al '026/Uematsu '511, as applied above, and further in view of Ishikawa et al (US 5795642).

Kubota et al teaches that the coating composition may be diluted with a **solvent** (See column 9, lines 42-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used either water or an organic solvent for diluting the coating composition in Kubota et al because Kubota et al does not limit its teaching to a particular solvent. Obviously, solvent is evaporated before curing.

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Kubota et al fails to teach that the drying steps are performed by a dryer at a temperature of from 230 °F to 390 °F in the presence of a large flow of air volume.

However, it is a common knowledge in the art that drying off a solvent may be carried out by hot air, as evidenced by Ishikawa et al (See column 16, lines 48-52) (Ishikawa et al teaches that drying of applied coating layer may be carried out by contacting the layer with heated gas (hot air), and the degree of drying can be controlled by adjusting the temperature and the feed rate (flow speed) of hot air). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant drying parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular coating composition in the absence of a showing of criticality.

9. Claim 38-40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekioka et al '752/Kubota et al '284/Uematsu '511 or over Sekioka et al '752/Kubota et al '284/Maag et al '026/Uematsu '511, and further in view of Ishikawa et al '642, as applied above, and further in view of Danelski (US 5282917).

As to lottery ticket, Sekioka et al discloses a method of making game tickets or cards. Since Sekioka et al does not limit its teaching to particular game cards, it would be obvious to make any kind of game ticket including lottery tickets.

As to electron beam, Sekioka et al teaches that resin compositions containing unsaturated compounds may be cured either by UV or by electron beam (See column 5, lines 55-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used electron beam for curing a radiation curable oligomer

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(prepolymer) materials in Kubota et al with the expectation of providing the desired cured layer since Sekioka et al teaches that resin compositions containing unsaturated compounds may be cured either by UV or by electron beam.

As to applying an image ink to the outer surface of the second layer, Danelski teaches that game tickets or cards are generally provided with visible image by lithographically printing with UV curable ink (See column 6, lines 58-59) in addition to concealed images (See column 1, lines 20-59). The visible image is covered by a transparent film (See column 2, lines 20-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have printed a visible image on a second layer of Kubota et al with UV curable ink.

As to aqueous ink of claim 39, it is well known in the art that UV curable ink for lithographic printing may be either water based or oil based*. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used water based ink for lithographic printing of a visible image since Danelski does not limit its teaching to particular UV curable ink.

As to a combination of aqueous first composition/aqueous second composition, Kubota et al teaches that the coating composition may be diluted with a **solvent** (See column 9, lines 42-43) without limiting to particular solvents. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used either water or an organic solvent for diluting the coating composition in Kubota et al because Kubota et al does not limit its teaching to a particular solvent. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to have used any combination of compositions

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with the expectation of providing the desired protective layer because Kubota et al does not limit its teaching to a particular combination.

Moreover, Maag et al teaches that radiation curable epoxy acrylate, urethane acrylate and polyester acrylate oligomers (See column 3, lines 20-38) may be formulated as water-based or solvent-based coating compositions (See column 3, lines 4-6).

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

* US 5417164 to Nishida et al is cited here to show that water based ink or oil based ink is suitable for lithographic printing (See column 4, lines 32-33).

Response to Arguments

Applicant's arguments with respect to claims 25-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Elena Tsoy Lightfoot, Ph.D.

Primary Examiner

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July 28, 2009

/Elena Tsoy Lightfoot/